

CLAIMS

We claim:

1. An improved shaped charge comprising:
 - (a) a charge case,
 - (b) a main load within the charge case; and
 - (c) a layer of a polymer/polymer mixture positioned between the main load and a liner.
2. The improved shaped charge of Claim 1 further comprises:
 - (d) a booster coupling the main load to an ignition source.
3. The improved shaped charge of Claim 1 wherein the polymer/polymer mixture undergoes a decomposition reaction to produce a fracturing pressure event.
4. The improved shaped charge of Claim 1 wherein the polymer/polymer mixture further comprises a metal.
5. The improved shaped charge of Claim 1 wherein the polymer/polymer mixture further comprises a metal oxide.
6. The improved shaped charge of Claim 1 wherein the polymer/polymer mixture further comprises a metal and a metal oxide
7. The improved shaped charge of Claim 1 wherein the polymer/polymer mixture comprises an additional oxygen source.
8. The improved shaped charge of Claim 6 wherein the oxygen source comprises a perchlorate salt.

9. The improved shaped charge of Claim 1 wherein the polymer/polymer mixture is polytetrafluoroethylene.
10. The improved shaped charge of Claim 4 wherein the polymer/polymer mixture is polytetrafluoroethylene and aluminum.
11. The improved shaped charge of Claim 4 wherein the polymer/polymer mixture is polytetrafluoroethylene and titanium.
12. The improved shaped charge of Claim 1 wherein the polymer/polymer mixture is mixed with an ignition speed controller.
13. The improved shaped charge of Claim 5 wherein the polymer/polymer mixture is polytetrafluoroethylene and a metal/metal oxide mixture.
14. The improved shaped charge of Claim 1 wherein the charge case comprises zinc.
15. The improved shaped charge of Claim 1 wherein the charge case comprises steel.
16. The improved shaped charge of Claim 1 wherein the charge case comprises a polymer and metal mixture.
17. The improved shaped charge of Claim 17 wherein the charge case comprises a mixture of polytetrafluoroethylene and titanium.
18. The improved shaped charge of Claim 1 further comprises:
 - (d) a decomposition catalyst.

19. An improved shaped charge comprising:
 - (a) a charge case;
 - (b) a main load within the charge case;
 - (c) a layer of a polymer/polymer mixture positioned between the main load and a liner; and
 - (d) a booster coupling the main load to an ignition source;wherein the polymer/polymer mixture undergoes a decomposition reaction to produce a fracturing pressure event.
20. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture further comprises a metal.
21. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture further comprises a metal oxide.
22. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture further comprises a metal and a metal oxide
23. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture comprises an additional oxygen source.
24. The improved shaped charge of Claim 23 wherein the oxygen source comprises a perchlorate salt.
25. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture is polytetrafluoroethylene.
26. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture is polytetrafluoroethylene and aluminum.

27. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture is polytetrafluoroethylene and titanium.
28. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture is mixed with an ignition speed controller.
29. The improved shaped charge of Claim 19 wherein the polymer/polymer mixture is polytetrafluoroethylene and a metal/metal oxide mixture.
30. The improved shaped charge of Claim 19 wherein the charge case comprises a polymer and metal mixture.
31. The improved shaped charge of Claim 19 wherein the charge case comprises a mixture of polytetrafluoroethylene and titanium.
32. The improved shaped charge of Claim 19 further comprises a decomposition catalyst.

33. A method of fracturing a formation comprising the steps of:

- (a) lowering an improved shaped charge into a well to a depth adjacent to the formation; wherein the shaped charge has a charge case, a main load within the charge case; and a layer of a polymer/polymer mixture positioned between the main load and a liner;
- (b) detonating the shaped charge.